

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): A device for processing the surface of a container, in which the processing is accomplished by a low-pressure plasma, by excitation of a reaction fluid with microwave electromagnetic waves, the device for processing comprising:

an enclosure in which the container is placed, the container having an elongated neck portion, the enclosure being made of a conductive material, inside of the enclosure, microwaves are introduced by a coupling device;

a tube which surrounds the container to delimit an internal cavity of the enclosure, such that an open space is provided between the enclosure and the tube;

a device extending into the enclosure to hold the neck of the container;

wherein the enclosure is a cylinder and its central axis is a main axis of the container, such that the coupling device has a wave guide tunnel which is disposed outside of the tube and which extends towards the main axis of the enclosure and which is provided within a window of a wall of the enclosure, said wave guide tunnel projected on a plane tangent to the enclosure and is rectangular in shape, the smaller dimension of the rectangle corresponds to its dimension along the direction of the axis of the enclosure, and

wherein the inside diameter of the enclosure is such that the microwaves are propagated into the open space between the enclosure and the tube, before reaching the tube, primarily

according to a mode in which an electrical field, resulting from the propagation of the microwaves, has an axial symmetry with respect to the central axis of the enclosure,

the device for processing further comprising a first ring-shaped plate and a second ring-shaped plate provided entirely inside the enclosure and formed so as to surround the tube,

wherein the first ring-shaped plate is axially offset from the second ring-shaped plate so that the first ring-shaped plate is provided above the window of the wall of the enclosure and the second ring-shaped plate is provided below the window of the wall of the enclosure.

2. (previously presented): The device according to claim 1, wherein the enclosure is a predetermined size such that if microwaves are introduced into the enclosure in the absence of a container, the variation of intensity of the electrical field has two maximums on one radius of the enclosure.

3. (previously presented): The device according to claim 2, wherein the microwaves have a frequency of 2.45 GHz, and the inside diameter of the enclosure is between 213 and 217 mm.

4. (previously presented): The device according to claim 1, wherein the enclosure is a predetermined size such that if microwaves are introduced into the enclosure in the absence of a container, the variation of intensity of the electrical field has three maximums on one radius of the enclosure.

5. (previously presented): The device according to claim 4, wherein the microwaves have a frequency of 2.45 GHz and the inside diameter of the enclosure is between 334 and 340 mm.

6. (previously presented): The device according to claim 1, wherein the enclosure is a predetermined size such that if microwaves are introduced into the enclosure in the absence of a container, the variation of intensity of the electrical field has four maximums on one radius of the enclosure.

7. (previously presented): The device according to claim 6, wherein the microwaves have a frequency of 2.45 GHz and the inside diameter of the enclosure is between 455 and 465 mm.

8. (previously presented): The device according to claim 1, wherein the wave guide tunnel has a rectangular cross section.

9. (previously presented): The device according to claim 8, wherein the microwaves have a frequency of 2.45 GHz, and the dimensions of the cross section of the wave guide tunnel are 43 mm along the direction of the main axis of the enclosure and 86 mm along a direction perpendicular to the main axis.

10. (previously presented): The device according to claim 1, wherein the container comprises a processed inner face.

11. (previously presented): The device according to claim 1, wherein the container comprises a processed outer face.

12. (previously presented): The device according to claim 1, wherein the tube comprises a wall made of a material that is appreciably transparent to the microwaves, and the container is received inside the cavity.

13. (previously presented): The device according to claim 1, wherein the container comprises a material deposited by the low-pressure plasma.

14. (previously presented): The device according to claim 1, wherein the tube is made of quartz.

15. (previously presented): A device according to claim 1, wherein the wave guide protrudes past a wall of the enclosure towards the container.

16. (previously presented): The device according to claim 1, wherein the container is disposed so that its bottom is spaced apart from the enclosure.

17. (previously presented): The device according to claim 1, wherein the wave guide is in the form of a rectangle having a uniform rectangular cross section extending to a back wall of the wave guide.

18. (previously presented): The device according to claim 1, further comprising a generator which produces the microwave electromagnetic waves, and the generator is disposed to protrude into the wave guide tunnel.

19. (previously presented): The device according to claim 1, wherein the tube is coaxially disposed with respect to the enclosure.

20. (previously presented) The device according to claim 1, wherein the first ring-shaped plate and the second ring-shaped plate are each respectively supported on an axially slidable rod.